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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,806	02/21/2002	James T. Clark	ADID116609	2053

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EXAMINER

FRIEDHOFFER, MICHAEL A

ART UNIT PAPER NUMBER

2832

DATE MAILED: 08/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/082,806

Applicant(s)

CLARK ET AL

Examiner

Michael A. Friedhofer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 17-28, 31-33, 35-40, 43-46, 48 and 49 is/are rejected.
- 7) ☒ Claim(s) 16, 29, 30, 34, 41, 42 and 47 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 7, 14, 27, 35, 43, and 49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 7, line 1 "the form" has no antecedent basis.

In claim 14, line 2 "adapted to slideably receive" is not a positive recitation of the claimed subject matter and should be changed to more positively recite the claimed limitation.

In claim 27, line 2 "the ends" has no antecedent basis.

In claim 35, line 1 replace "in" with --is--.

In claim 43, line 4 "the length" has no antecedent basis.

In claim 49, line 5 "adapted to connect" is not a positive recitation of the claimed subject matter and should be changed to more positively recite the claimed limitation.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 1-13, 15, 17-22, 24, 26-28, 31, 33, 35, 37-39, 48, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huo-Lu in view of Hamilton et al and Bagley.

Huo-Lu discloses in figures 1-4 a back-lit key assembly including a key 10 having a light translucent region and being axially movable along a longitudinal axis of the assembly; a base 60; a key support structure 20 operably coupled to the base for guiding the key; a switch 50 operable to generate a signal corresponding to the movement of the key; and an illumination source 40 mounted to the base for providing light for backlighting the key assembly through the light translucent region. The switch 50 includes a movable layer and a fixed layer. The key 10 includes an integral, elongate actuator 18. The movable layer includes an electrical contact. An actuator layer is formed by the domes 38, which form depressible members above the movable layer of the switch. The base includes electrical circuitry for the illumination source via source 40. The key support structure includes a first linkage 21 coupled to a second linkage 22. The translucent region forms an alphanumeric indicator.

Huo-Lu does not disclose the opaque member within the switch such that the illumination source is mounted to the base in alignment with the opaque member.

Hamilton et al teaches in figures 1-7 a back-lit key assembly including a key 58; a switch formed by translucent layer 32-34; contacts 36-50 form a plurality of spaced apart bars in communication with electrical leads; contacts 52

are a plurality of spaced-apart bars disposed perpendicularly to the spaced apart bars of the other contacts; and LED 28 for back-lighting the key assembly. The contacts 36-50 and 52 are opaque members. The provision of the opaque bars with the LED mounted behind them creates an even distribution of light throughout the key assembly.

Bagley teaches a back-lit key assembly in which the keys 35 are backlit by luminescent source 89 mounted on the base behind switch assembly 37-41. The luminescent source could be a luminescent board or LEDs in which the circuitry is located on the base.

It would have been obvious to one of ordinary skill in the art to apply the teachings of Hamilton et al and Bagley to Huo-Lu to place the illumination source and circuitry therefor on the base while forming the switch contacts in the pattern and being opaque as taught by Hamilton et al because this is for the purpose of more evenly distributing the light over the entire surface to be illuminated removing a hot or bright spots on the key. As for the method of producing the indicator, this is a matter of engineering design choice not affecting the illumination of the key or the operation of the key and would be based on the materials and equipment available to the manufacturer.

4. Claims 1, 3, 5, 6, 14, 19, 20, 22, 23, 25, 31, 32, 36, 38-40, 43-46, 48, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dugas et al in view of Hamilton et al and Bagley.

Dugas et al discloses in figures 1-7 a back-lit key assembly including a key 16 having a light translucent region 48; a base or circuit board 24; a key support structure or socket 32 for slideably receiving the movable key; a switch formed by movable layer 22 and the base 24; and illumination sources 44 formed on the base with accompanying circuitry. The movable layer includes an actuation layer having depressible member 32 that extends outwardly from the actuation layer and includes the electrical contact 74. Elongate member 63 is integral with the key for operating the switch.

Dugas et al does not disclose a separate base below the circuit board for mounting the illumination source with the switch mounted above it in which the switch includes contacts are opaque.

Hamilton et al teaches in figures 1-7 a back-lit key assembly including a key 58; a switch formed by translucent layer 32-34; contacts 36-50 form a plurality of spaced apart bars in communication with electrical leads; contacts 52 are a plurality of spaced-apart bars disposed perpendicularly to the spaced apart bars of the other contacts; and LED 28 for back-lighting the key assembly. The contacts 36-50 and 52 are opaque members. The provision of the opaque bars with the LED mounted behind them creates an even distribution of light throughout the key assembly.

Bagley teaches a back-lit key assembly in which the keys 35 are backlit by luminescent source 89 mounted on the base behind switch assembly 37-41. The

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luminescent source could be a luminescent board or LEDs in which the circuitry is located on the base.

It would have been obvious to one of ordinary skill in the art to apply the teachings of Hamilton et al and Bagley to Dugas et al to place the illumination source and circuitry therefor on a base below the switch while forming the switch contacts in the pattern and being opaque as taught by Hamilton et al because this is for the purpose of more evenly distributing the light over the entire surface to be illuminated removing a hot or bright spots on the key. As for the method of producing the indicator, this is a matter of engineering design choice not affecting the illumination of the key or the operation of the key and would be based on the materials and equipment available to the manufacturer.

Allowable Subject Matter

5. Claims 16, 29, 30, 34, 41, 42, and 47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. English et al, Lee, and Tsai et al teach key assemblies utilizing a socket for guiding the key in its movement.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Friedhofer whose telephone number is 703-308-3304. The examiner can normally be reached on Mon-Fri 6:00 - 2:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 703-308-7619. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3432 for regular communications and 703-395-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

A handwritten signature in black ink, appearing to read "Michael A. Friedhofer".

Michael A. Friedhofer
Primary Examiner
Art Unit 2832

maf
July 24, 2003